

PHASE I BOOK EXPLOITATION

SOV/3339

Markov, Aleksandr Mikhaylovich

Sputnik 1 sovremennost' (The Satellite and the Present) Moscow,
Gospolitizdat, 1959. 78 p. 50,000 copies printed.

Ed.: O. Vadeyev; Tech. Ed.: Yu. Mukhin.

PURPOSE: The book is intended for the general reader.

COVERAGE: This booklet praises the achievement of Soviet science in launching the first earth satellite, and relates this to the overall aims of Soviet science to further peace and the progress of man. No technical data are given. No personalities are mentioned. There are no references.

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The Satellite and the Present

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The Springtide of Mankind

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AVAILABLE: Library of Congress

Card 2/2

AC/mg
4-27-60

S/137/62/000/001/073/237
A060/A101

AUTHORS: Davidkov, P., Markov, A.

TITLE: On dividing the rolling process into three stages and determining their boundaries

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1962, 2, abstract 1D6
("Minno delo i metalurgiya", 1961, 16, no. 5, 26 - 27 [Bulgarian])

TEXT: The process of rolling is divided into three stages. Here, A. P. Chekmarev proceeds from the geometric parameters of the focus of deformation. According to A. P. Chekmarev the first stage of rolling corresponds to the moment from the entry of the metal between the rolls up to the time it reaches the line connecting the axes of the rolls. The beginning of the steady state of rolling (or the second stage) coincides with the exit of the forward edge of the specimen beyond the line connecting the axes of the rolls, and ends when the trailing end of the specimen passes over the beginning of the deformation focus. The third stage corresponds to the passage of the trailing edge of the specimen from the beginning of the gripping arc to the line connecting the roll axes. I. M. Pavlov divides the rolling process into three stages, proceeding from considera-

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On dividing the rolling process...

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tions of force. According to I. M. Pavlov the first stage of the rolling process lasts from the moment of contact between the body being worked and the rolls, to the moment of exit of the rolled shape from the rolls in the form of a rigid leading end of a certain length. Thereupon there proceeds the steadystate process, continuing until the trailing rigid end begins to lose its rigidity and the influence upon the rolling process. In order to verify these hypotheses an investigation was carried out at the NIIMM (Bulgaria) upon the total force, force of friction, and the rolling speed of the initial, final, and the steady-state stages of rolling. The parameters were recorded by means of an oscillograph. The processing of the obtained experimental data has fully confirmed the correctness of the division of the rolling process into the three stages carried out by I. M. Pavlov. An increase in the rolling rate and a change in the γ -region is noted in the third stage. ✓

G. Mekhed

[Abstracter's note: Complete translation]

Card 2/2

DAVIDKOV, P.I., inz., kandidat technickyh ved (Bulgaria); MARKOV, A.M.,
inz. (Bulgaria)

An apparatus for measurement of the friction on rollers. Hut
listy 17 no.7:493-495 J1 '62.

DAVIDKOV, P.I., inz., kandidat technickych ved (Bulharsko); MARKOV, A.M., inz.
(Bulharsko)

A ~~new~~ method of determining the external friction coefficient in
upsetting on press. Hut listy 17 no.9:634-636 S '62.

MARKOV, A.M.

KAREVA, T.P. (Moscow); MARKOV, A.M., professor (Moscow).

Exercise therapy in myocardial infarctions. Klin.med. 32 no.1:42-52
Ja 54. (MLRA 7:4)

(Heart--Infarction) (Exercise) (Physical therapy)

MARKOV, A.M., red.

[Collection of articles in honor of the 40th anniversary of
the great October Socialist Revolution] Iubileinyi sbornik
nauchnykh rebot, posviashchennyi 40-letiiu Velikoi Oktiaabr'skoi
sotsialisticheskoi revoliutsii. Moskva, Medgiz, 1958. 249 p.

(MEDICINE)

(MIRA 13:8)

MARKOV, A.M., prof. (Moskva)

Some problems in leukosis. Klin.med. 36 no.7:5-9 J1 '58
(MIRA 11:11)

(LEUKEMIA, statist.
mortal. (Rus))

MARKOV, A.M., prof.

Peptic ulcer of the stomach. Zdorov's 5 no.5:11-13 My '59.
(MIRA 12:11)

(PEPTIC ULCER)

MARKOV, A.M., zasluzhennyy deyatel' nauk (Moskva)

Some problems of general and specialized prophylaxis. Klin.
med. 40 no.11:3-6 N'62 (MIRA 16:12)

Mar/Apr 49

USSR/Engineering

Mechanics

Mathematics - Applied

"Dynamic Stability of Anisotropic Cylindrical Shells," A. N. Markov, Gor'kiy, 6 pp

"Priklad Matemat 1 Mekh" Vol XIII, No 2

Investigates dynamic stability of orthotropic cylindrical shells under the action of pulsating forces, using Ilya's approximation theory. Assumes that variations in curvature can be expressed with a sufficient degree of practical accuracy by

.C.4YT29

USSR/Engineering (Contd)

Mar/Apr 49

displacement v , which is the component of displacement along the normal to the surface. Gives correction of this assumption by formulas obtained. Submitted 22 Dec 48.

42/49T29

PA 42/49T29

MARKOV, A. N.

MARKOV, ALEKSEI NIKIFOROVICH.

Opyt skorostnogo rezaniia metallov (Moskva Moskovski rabochii, 1950. 43 p.
ports.

Experience in high-speed metal-cutting.

DLG: T01230.LPL

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of
Congress, 1963.

MARKOV, A.N., inzhener; KHARLAMOV, V.M., inzhener; IOFFE, Ye.F., inzhener;
MIROHOV, Ye.P., dotsent; ZEYLIDZON, Ye.D., inzhener.

Extent of telecontrol of substations. Elek.sta.26 no.12:43-49 D
'55. (MLRA 9:4)

- 1.Yaroslavskaya elektrenergeticheskaya sistema (for Markov).
- 2.Glavnoye upravleniye elektrestantsiy i elektrosetey Yuga (for Kharlamov).
- 3.Tekhnicheskoye upravleniye MES (for Zeylidzon).
(Electric substations) (Remote control)

SOV 124-57-5-5920

Translation from: Referativnyy zhurnal Mekhanika, 1957, Nr 5, p. 30 (USSR)

AUTHOR: Markov, A. N.

TITLE: The Effect of Constant Temperature on the Stability and Vibrations of Structural Members (Vliyaniye postoyannoy temperatury na ustoychivost' i kolebaniya elementov inzhenernykh konstruktsiy)

PERIODICAL: Uch. zap. Gor'kovsk. un-ta, 1955, Nr 28, pp 95-101

ABSTRACT: The author examines the effect of an increase in temperature on the critical compressive force and natural-vibration frequencies of a rod, a plate, and a cylindrical shell, each subjected to various different types of constraint. In all cases the temperature distribution is assumed to be uniform throughout the thickness of the material. The effect of increasing temperature is allowed for by the introduction of a term for the thermal expansion of the material, the material's elastic properties are not considered to be temperature dependent. For each mode of constraint employed the author determines a critical temperature at which buckling may occur.

S. A. Shesterikov

Card 1/1

124-57-1-868

Translation from: Referativnyy zhurnal Mekhanika, 1957, Nr 1, p 116 (USSR)

AUTHOR: Markov, A. N.

TITLE: To the Theory of Orthotropic, Extremely Slanted Shells (K teorii ortotropnykh ves'ma pologikh obolochek)

PERIODICAL: Uch. zap. Gor'kovsk. un-ta, 1955, Nr 28, pp 102-110

ABSTRACT: A number of problems are examined for an orthotropic, slanted shell having a rectangular planform, comprising the following: The deflection of the shell caused by a concentrated force, the stability of a shell, transverse oscillations and the dynamic stability of a shell. The work overlooks certain references in the literature. Some of the equations adduced in the paper have been published by S. A. Ambartsumyan (Izv. AN ArmSSR, 1947, Nr 9).

1. Shells--Deflection--Mathematical analysis Ye. F. Burmistrov
2. Shells--Stability--Mathematical analysis 3. Shells--Stability--Mathematical analysis 4. Shells--Theory

Card 1.1

MARKOV, Aleksandr Nikolayevich; VOLSKIY, M.I., doktor tekhn.nauk,
prof., red.

[Brief course of the theory of elasticity]Kratkii kurs teorii
uprugosti. Gor'kii, Gos.univ., 1960. 207 p. (MIRA 16:2)
(Elasticity)

S/045/60 044 11 14 4
A053/A024

AUTHORS: Markov, A.N.; Ivanov, V.Ya.; - Engineers

TITLE: Insulating Covers From Polychlorvinyl Tape

PERIODICAL: Stroitel'stvo Truboprovodov, 1960, No. 11, pp 17 - 18

TEXT: Mosgazprovodstroy Trust in cooperation with VNIIST have conducted practical tests with adhesive polychlorvinyl tape by using it as insulation on the pipeline Dashava-Minsk, passing through woodland and swamps. The tape had been developed by VNIIST and supplied by the Novosibirskiy khimicheskiy zavod (Novosibirsk Chemical Plant). The tape came in rolls of 120 - 130 m weighing from 17 - 35 kg. The prime coat consisted of a solution of bitumen and benzine, on which the tape was applied in two layers. For this operation a modified insulating machine S-239 with two spools was used. Between the priming machine and the insulating machine a space of 6 - 10 m was left, permitting the primer to dry sufficiently. The edges of the tape require trimming before being applied to prevent the tape from tearing. An overlap of 40 - 50 cm makes the joint between the end of one tape and the beginning of a new one. The winding of the tape has been tried at all speeds, best results were obtained with second and

Card 1 2

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A053, A026

Insulating Covers From Polychlorvinyl Tape

third speeds. The spiral overlap (20 - 30 mm) of the tape was controlled by assorted guides on the spool rim. The pitch of the winding is determined by the width of the tape. The consumption of tape amounted to 2,000 kg per 1 km of pipeline for two layers of tape. Workmen of VNIIST have developed a simple hand device for trimming the edges of tape. The following are the conclusions drawn from the experience gained on the Dashava-Minsk pipeline. The utilization of adhesive polychlorvinyl tape is a promising novelty in pipeline construction and permits to mechanize the whole process of insulation. This method cuts out all work and machinery required in connection with preparing bitumen mastic. The insulating and pipe laying team working with tape needs the following equipment for 720 mm pipes: 4 pipe laying machines T-15-30, 1 twin-rotor cleaning machine, 1 tractor, 1 insulating machine, 1 reservoir for primer. VNIIST has developed devices for preparing the tape before application. Edge trimming of tape can be done on the insulating machine. To improve the quality of the insulation, tape of one width only should be used, which would also facilitate work and control of the insulating machine.

DORFMAN, G.S., inzh.; KORACHENKO, V.G.; MARKOV, A.N.

Over-all mechanization of paper roll reloading. Mekh. i avtom.
proizv. 18 no.2:21-24 F '64. (MIRA 1964)

MARKOV, A.N., aspirant

Geometry of the engagement of evolvent cogwheels with a reduced tooth height. Nauch. trudy Mosk. inst. radioelek. i gor. elektromekh. no. 49 pt. 2:58-64 ' 64 (MIRA 10:1)

Contact strength of cogwheels with the tooth height cut in half. Ibid.:65-68.

MARKOV, A. P.

MARKOV, A.P.; MAKSIMOV, V.I.

Lining acid towers with wooden blocks. Bm.prom. 29 no.5:18-19
My '54. (MIRA 7:7)

1. Priozerskiy tsellyuloznyy zavod.
(Wood-pulp industry)

MARKOV, A. P. (Main Veterinary Surgeon, Nerekhta Raion, Kostroma Oblast')

"Contribution of the Nerekhta Raion to the development of animal husbandry."

Veterinariya, Vol. 38, No. 2, 1961, p. 12.

Murkov, V.P., inzh.

Apparatus for the condensation of water vapor in a vacuum.

Khim.mash. no.6:6-7 N-D '60.

(MIRA 10:11)

(Condensers (Vapors and Gases))

USSR/Medicine - nutrition

FD-3063

Card 1/1 Pub. 141 - 14/23

Author : Markov, A. P.

Title : Vitamin C value of leaf frost-resistant cabbage

Periodical : Vop. pit., 45-46, May/Jun 1955

Abstract : Analysis of the vitamin C content of the leaves of frost-resistant cabbage revealed that it maintains a high vitamin C level even through winter months. Its minimum content is 63-98 mg% in November. Recommends that the cabbage be cultivated as a valuable source of vitamin C, especially during the fall and winter months. No references.

Institution :

Submitted :

MARKOV, Aleksandr Prokof'yevich; BORISOVA, K., red.; ULANOVA, L.,
tekhn.red.

[French peasants forsake the fields] Frantsuzskie krest'iane
pokidaiut polia. Moskva, Izd-vo sotsial'no-ekon.lit-ry, 1958.
66 p. (MIRA 13:1)
(France--Agriculture)

111
GARMASHEV, Dmitriy Leonidovich; KUDRYAVTSEV, Fedor Aleksandrovich;
MARKOV, Aleksandr Panteleymonovich; POPOV, V.P., redaktor;
KONTOROVICH, A.I., tekhnicheskiy redaktor.

[Modern methods of installing marine shafting] Sovremennye
metody montazha sudovykh valoprovodov. Leningrad, Gos.
soiuznoe izd-vo sudostroit. promyshl., 1955. 177 p. (MLRA 8:12)
(Shafts and shafting) (Marine engineering)

PANOV, V.A.; MARKOV, A.I.

Electric equipment on motorships of the "Upleural'sk" type inform -
sbor.TSNIIMF no.52. Tekh.eksplo.mor.flota no.5:69-78 '60.
(MIRA 15-2)

(Electricity on ships)

GARMASHEV, Dmitriy Leonidovich, kand. tekhn. nauk; KUDRYAVTSEV, Fedor Aleksandrovich, inzh.; MARKOV, Aleksandr Panteleymonovich, inzh.; GERSHTEYN, Yu.S., inzh., retsenzent; ROKHLIN, A.G., kand. tekhn. nauk, retsenzent; ZHIDYAYEV, O.A., nauchnyy red.; OZEROVA, Z.V., red.; KRYAKOVA, D.M., tekhn. red.

[Modern methods of assembling marine shafting] Sovremennyye metody montazha sudovykh valoprovodov. Izd.2., ispr. i dop. Leningrad, Gos. soiuзное izd-vo sudostroit. promyshl., 1961. 280 p.

(Shafting) (Ships—Equipment and supplies) (MIRA 14:10)

MARKOV, A.P., inzh.

Handy three-way cock. Bezop.truda v prom. 5 no.7:31 J1 '61.
(MIRA 14:6)

1. Upravleniye Sverdlovskogo okruga Gosgortekhnadzora RSFSR.
(Boilers--Safety appliances)

MARKOV, A. P., inzh.

Use of plastics for the mounting of ship equipment. Sudostroenie
28 no.10:36-40 0 '62. (MIRA 16:1)

(Marine engineering) (Plastics)

MARKOV, A.P.

Experimental investigation of winches working on alternating current during their operation on ships of the "Andishan" type. Inform. sbor. TSNIIMF no.81: Tekh. ekspl. mor. flota no.17:18-28 '62. (MIRA 16:6)

(Winches--Electric driving)
(Electricity on ships--Testing)

POPOV, Vladimir Fedorovich; SPETS. ZH.,
... ..
red. : YARKOV, A.I.

(Mounting of marine power plants. Montazh i ustroystvo
vykh ust' novok. Leningrad, Sudostroenie, 1966.
(N.I.A.)

POLONSKY, N.S.; YEREMENKO, I.I.; YEREMENKO, Y.S.; YEREMENKO, I.I.;
YEREMENKO, I.I.; YEREMENKO, I.I.; YEREMENKO, I.I.; YEREMENKO, I.I.;
YEREMENKO, I.I.; YEREMENKO, I.I.; YEREMENKO, I.I.; YEREMENKO, I.I.;
YEREMENKO, I.I.; YEREMENKO, I.I.; YEREMENKO, I.I.; YEREMENKO, I.I.

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L. ORL79-67 EWT(d)/EWP(h)/EWP(l)

ACC NR: ARG017578 (N)

SOURCE CODE: UR/0196/66/000/001/L025/L026

AUTHOR: Markov, A. P.

TITLE: Speed characteristics of shipboard cargo hoists driven by asynchronous motors

SOURCE: Ref. zh. Elektrotehnika i energetika, Abs. 1L137

REF SOURCE: Inform. sb. Tsentr. n.-i. in-t morsk. flota, vyp. 131, 1965, 21-29

TOPIC TAGS: hoisting equipment, electric motor, asynchronous motor

TRANSLATION: Design speed characteristics of cargo hoists, driven by three speed asynchronous electric motors are assumed to be analogous to the existing hoists or calculated on the basis of the capacity of the available electric drive. In both cases the design operational values of the hoists are not confirmed in actual use. During the design of hoists and the selection of an electric motor, the speed characteristics of hoists and mechanical characteristics of the drive must be considered. Operational efficiency of hoists depends on the speed characteristics, on the type of the load handled, the preparation of the load for the hoisting, and the qualifications of the hoist operator. An example used to consider the duration of a single operational cycle of the hoist shows the great influence of the load type on the duration of the interval during which the load is prepared as well as on the duration of use of various speed-ranges and speed selection for each speed range of the hoist. The variation range of

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ACC NR: AR6017578

the hoist speeds should be sufficiently great for the handling of various loads. The imported three speed hoist motors installed on ships have the following number of poles for the individual ranges: first step--28, 32, or 40; second step--8; third step--4. The domestic electric motors, Model MAP 612, are manufactured with the following numbers of poles: first step--24; second step--12; third--6. It is obvious from the foregoing that the speed control range for the imported motors can be available in ratios of 1:2:10, 1:2:8, 1:2:7, and for the domestic motors only--1:2:4. In order not to increase the first speed range beyond the permissible values, hoists equipped with domestic motors have maximum lifting and lowering speeds not exceeding 50 to 55 m/min, which limits the possibilities during the handling of light loads and reduces maneuvering capabilities. The analysis of statistical data, obtained during the process of handling of miscellaneous loads under various conditions with hoist having diverse speed characteristics, shows a definite relation between the operational mode of the electric drive, and the efficiency of the hoist, and allows the determination of its optimum speed characteristics and parameters of the electric drive. The method of statistical data analysis is included, as are certain conclusions from the experimental work with a cargo hoist with two speed ranges. 6 figures, 2 references. A. Vasil'yev.

SUB CODE: 13,09

Card 2/2

BURMISTROV, Vasilii Georgiyevich; VINOGRADOV, Vasilii Ivanovich;
KAZYMOV, Vladimir Nikolayevich; KOSTIN, Vasilii
Yelizarovich; MARKOV, Arkadiy Semenovich; EYDERMAN,
Pinkhus Moiseyevich; ZHERENKOV, Ye.V., red.

[Collection of problems on the organization and technique
of trade] Sbornik zadach po organizatsii i tekhnike trgovli.
Moskva, Ekonomika, 1965. 174 p. (MIRA 18:6)

MARKOV, A.S. (Sumskaia oblast')

Organization of medical service stations in the field. Med. sestra
15 no.4:16-17 Ap '56. (MIRA 9:7)

1. Glavnyy vrach Trostyanetskoy gorodskoy bol'nitsy
(MEDICIN, RURAL)

MARKOV, A.S.

Use of films in the laboratory work in agriculture. Est. v shkole
no.4:71-76 J1-Ag '56. (MLRA 9:9)

1.Leningradskiy gosudarstvennyy pedagogicheskiy institut imeni
A.I.Gertsena.
(Motion pictures in education) (Agriculture--Study and teaching)

MARKOV, A.S. (Astrakhan')

By the decree of Peter the Great. Priroda 51 no.4:88-89 Ap
'62. (MIRA 15:4)
(Astrakhan Province--Birds)

SOV/113-58-4-12/21

AUTHOR: Markov, A.S.

TITLE: An Automatic Feeding Device For a Drill Press (Avtomaticheskoye zagruzochnoye prispособleniye k sverlil'nomu stanku)

PERIODICAL: Avtomobil'naya promyshlennost', 1958, Nr 4, pp 33-34 (USSR)

ABSTRACT: In order to expedite the removal of the chamfered edges or reaming the openings of the sleeves of propeller-shafts on a drilling machine, an automatic pressure device has been developed and was introduced into the production process. Figures 1 to 3 show various views of this device and are briefly explained. In the removal of chamfered edges from one side of the opening of the working piece the device machines 100 to 120 pieces a minute, while in the reaming of the opening of the sleeve 25 to 30 pieces a minute are machined. There are 3 diagrams.

ASSOCIATION: Mytishchinskiy mashinostroitel'nyy zavod (The Mytishchi Machinebuilding Plant)

1. Drilling machines 2. Machine tools--Equipment 3. Cutting tools--Control 4. Feed mechanisms--Design

Card 1/1

MARKOV, A.S.

Models for use in physics classes to demonstrate the principle of
the movement of agricultural machine and equipment (olitekh
zhuk. no. 7, 67-80 JJ 57)

1. rubezhskaya srednyaya shkola Vurmarskogo rayona (Leningradskoy 78)
Mechanical models) Physics--study and teaching
(Agricultural machinery)

MARKOV, A.S.

Models demonstrating the movements of agricultural equipment. Politekh.
obuch. no.3:66-68 Mr '58. (MIRA 11:2)

1. Oraushskaya srednyaya shkola Vurnarskogo rayona Chuvashskoy ASSR.
(Machinery--Models) (Poultry houses and equipment) (Greenhouse)

FRAYFEL'D, Aleksandr Vladimirovich, kand. tekhn. nauk; MARKOV, Aleksandr
Sergeyevich, inzh.; TYURNIN, Georgiy Aleksandrovich, inzh.;
MARGOLIS, S.M., inzh., retsenzent; BOBKOVA, Ye.N., tekhn. red.

[Design, installation, and operation of a contact network]
Ustroistvo, montazh i ekspluatatsiia kontaktnoi seti. Pod ob-
shchei red. A.V.Fraifel'da. Moskva, Transzheldorizdat, 1962.
(MIRA 15:7)

411 p.

(Electric networks) (Electric railroads)

MARKOV, A.V.

Zinovii Petrovich Solov'ev. Khirurgiia, Moskva no.1:3-9 Jan 52.
(CML 21:5)

1. Head of the Medical Corps of the Red Army.

CA 111500 / 11

7

Selection of pig iron for sheet metal rolling. N. I. Blinov and A. V. Markov. No. 8, 91, 25, 1948. For sheet rolling were tested Mo-steel (0.13-0.1% Mo, Cr-Ni (Cr 0.06-0.08 and Ni 0.22-0.07%), and C-steel (2.00-3.20% C) rolls. Most resistant were Mo-steel rolls (only 0.3-0.4%). The Mo-steel reduced the roll consumption by 2%. Their production presented no difficulties. The preferred compn. for C-steel roll was C 2.0-3.1, Si 0.0-0.9, Mn 0.3-0.4, P 0.3-0.45, and S 0.02%. The depth of cementation of these rolls should be 10-15 mm. The C-steel rolls are not as durable as the Mo-steel rolls but since they cost less, the cost per unit product is about the same for both kinds of rolls. The best surface of the sheet was obtained with Cr-Ni steel but then cost per unit product is excessive. M. Hasch.

MARKOV, Aleksandr Vladimirovich; SHAFIRKIN, B.I., redaktor; BOBROVA, Ye.N.,
tekhnicheskii redaktor.

[Organizing the transportation of grain] Organizatsiia perevozok
zernovykh грузов. Moskva, Gos.transp.zhel-dor.izd-vo, 1957.
242 p. (MIRA 10:11)

(Grain--Transportation)

MARKOV, Aleksandr Vladimirovich, KONYAYEV, Vasilii Georgiyevich, RATNER, M.A.
red.; BOBROVA, Ye.N., tekhn.red.

[Resources for increasing the classification capacity of yards; experience
of the Sverdlovsk Classification Yard] Rezervy pererabatyvniushchei
spособnosti stantsii: opyt st. Sverdlovsk-Sortirovochnyi. Moskva,
Gos.transp. zhel-dor. izd-vo, 1958. 41 p. (MIRA 11:9)
(Sverdlovsk--Railroads--Yards)

... 1946, A. V.

USSR/Optics

Microphotometry

Photometry

Dec 1946

"A Proposed Photoelectric Microphotometer for Negatives," A. V. Markov, 10 pp

"Zhur Tekh Fiz" Vol XVI, No 10

Many authors have attempted to describe a simplified apparatus for astrophysical and physical investigations, where it is necessary to make photometric measurements of the focal image on the negative. For this, it was necessary to have a system of complex lenses to create a sharp, clear, small image on the diaphragm. The author discusses a typical apparatus for a microphotometer for negatives. Submitted at the Laboratory of Physics, Natural Research Institute imeni Lesgaft.

ID

26753

MARKOV, A. V.

A. V. Markov

First all-union conference for Astro spectroscopy

Priroda

3, 1951, 78

From: [REDACTED]. Trans. con. list of R-Per. No. 30, Sept. 1951, p. 49

MARKOV, A. V.

Meteorological Abst.
Vol. 4 No. 5
May 1953
Miscellaneous
Applications

✓ 4.5-243 ✓
Markov, A. V. Obrazovanie rel'efa i fizicheskie svoystva lunnoi poverkhnosti. [Formation of the relief and physical properties of the surface of the moon.] *Priroda*, Moscow, No. 9, 12-20, Sept. 1951. 7 figs., 27 refs. MH-BH—A major popular article, giving many details of the present day knowledge of the morphology, physiography, soil or rock formations, radiative characteristics (albedo), climate, etc. of the moon. Subject Headings: 1. Albedo of moon 2. Lunar atmosphere 3. Planetary atmospheres — M R. 523.3

1. MARKOV, A. V.
2. USSR (600)
4. Moon-Surface
7. Physical characteristics of the moon's surface and its possible variations.
Izv.Glav.astron.obs. No. 2 - 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1955. Unclassified.

MARKOV, A.V.; SHCHEGOLEV, D.Ye.

Possible periodicity in change in brightness in the penumbra of lunar eclipses. Izv.Glav.astron.obser. 19 no.4:34-44 '53. (MIRA 8:7)
(Eclipses, lunar)

KRISHTOPOVICH, A.N. [deceased]; L'VOV, V.Ye.; MARKOV, A.V., professor;
KOROLEV, A.V.; GOLOSNIITSKIY, L.P.; OGORODNIKOV, K.P., professor;
BYGIMSON, M.S., professor; LOZIN-LOZINSKIY, L.K., professor;
VOROB'YEV, A.G., professor; KOZLOVA, K.I.; KAZENKOV, B.A.; SUSLOV,
A.K.; GEL'FREYKH, G.B.; VASIL'YEV, O.B.; LICHKOV, B.L., professor;
SYROMYATNIKOV; KUTYREVA, A.P.; KATTERFEL'D, G.N.; SYTINSKAYA, N.N.;
SHARONOV, V.V.; SUVOROV, M.I.; KUCHEROV, M.I.; TIKHOV, G.A.;
GORSHKOV, P.M.

Addressee by A.N.Krishtofovich and others. Trudy Sekt.astrobot.AM
Kazakh.SSR 4:68-157 '55. (MLRA 9:12)

(Mars (Planet))

MARKOV, A.V.

Study of extragalactic nebulae and results of photometric
observations with the ASI-4 mirror-lens camera. Izv.GAO
20 no.3:110-122 '56. (MIRA 13:5)
(Nebulae)

MARECV, A. V.

"The Equipment in Industry for Thermoelectrical Temperature Monitoring
of Narrow Strips of the Surface of the Moon."

Report presented at the Plenary Meeting of the Committee of Planetary Physics,
Council of Astronomers, Khar'kov, 20-22 May 1958.
(Vest. Ak Nauk SSSR, 1958, No. 8, p. 113-114)

AUTHOR: Markov, A., Doctor of Physical and Mathematical Sciences, Chief of the Planet Research Group at the Pulkovo Observatory, AS USSR

TITLE: The Moon (O lune), The Moon, Our Closest Neighbor (Luna nash blizhayshiy sosed)

PERIODICAL: Tekhnika molodezhi, 1958, Nr 10, pp 5 - 6 (USSR)

ABSTRACT: This is a description of the moon. The moon revolves about the earth in an elliptic taking 27 days, 47 minutes and 11 seconds for one revolution. During the same time she also rotates about her own axis. Since the orbit of the moon deviates by 5 degrees and 5 minutes and her velocity in the elliptic orbit is non-uniform only about 40% of her surface are visible from the earth. Her diameter is 3476 km. Her mass is 81 times smaller than of the earth. The mean specific density is equal to 3.3 and the density of the rock which forms the moon's crust is about 2. On the moon gravity is six times weaker than on the earth. The surface of the moon differs very much from that of the earth. By means of telescopes photographs were made which rendered it possible to draw charts of

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The Moon. The Moon, Our Closest Neighbor

SOV/29-58-10-4/28

that part of the moon surface which is visible from the earth. (Colored inserted loose leaf). The greater, somewhat lighter part is covered with mountains, the smaller somewhat darker part consists of mostly circular valleys. The diameter of the largest valley reaches 900 km. The first observers called those valleys seas by mistake. On the visible part of the moon are about 35 000 annular mountains and craters. Their diameters are from 2 to 250 km. Mountain chains which are mainly situated at the edge of the "seas" are also very interesting. Also a great number of crevasses were discovered; they are mainly situated in the "seas". 300 craters were also observed with comparatively bright walls. They emit entire systems of "rays". Even by a great number of astro-physical observations it has hitherto not been possible to obtain information on physical conditions of the moon as well as on its surface. The mentioned observations were carried out with the most modern instruments in the USSR and abroad. On the strength of the investigation results which have hitherto been obtained it may, however, be said that

Card 2/3

The Moon. The Moon, Our Closest Neighbor

SCV/29-56-10-4, 25

physical conditions are severe. The moon's crust which is covered by a powdery layer is supposed to bear numerous useful resources. For a well-prepared expedition a visit to the moon promises a number of practical and scientific results. A further aim would be the building of a permanent space station for cosmic flights as well as of an observatory for the exploration of space removed from atmospheric influence. There are 4 figures.

ASSOCIATION: Pulkovskaya observatoriya AN SSSR (Pulkovo Observatory, AS USSR)

Card 3/3

MARKOV, A.V.

Optical and photometric properties of the ASI-4 astrographic
mirror-lens camera. Izv.GAO 20 no.5:130-137 '58.

(MIRA 13:5)

(Astronomical photography--Apparatus and supplies)

MARKOV, A.V.

Results of experimental studies of the polarization of features
on the moon's surface. Izv.GAO 20 no.5:138-155 '58.
(MIRA 13:5)

(Moon--Surface)

МАЛКОВ, А. В.

PLATE 1 BOOK EXPLANATION 507/311

Berezhnev, B. P., V. A. Brednikov, M. S. Zolotarev, B. L. Izraelovskiy, A. I. Kargin, L. P. Stupitskiy, N. N. Sytskiy, A. I. Eshakov, S. I. Khabibulin, V. V. Shumakov, and A. I. Tsvetkov.

Book (The Moon) Moscow, Fizmatgiz, 1960. 384 p. 4,000 copies printed.

Re: (Title page) A. V. Mal'kov, Doctor of Physics and Mathematics; Ed.: S. I. Khabibulin, Tech. Ed.: B. I. Kuznetsov.

PREFACE. This book is intended for astronomers, astrophysicists, and other scientific and technical personnel interested in lunar research.

CONTENTS. The book, written by 11 Soviet authorities, summarizes and evaluates research done to date in astronomy. The motion, position, and figure of the Moon, physical properties of the lunar surface, the question of the existence of lunar atmosphere, mapping of the Moon, radar investigations, and the effect of external cosmic forces on the Moon are discussed. An index of Russian and Latin designations of lunar features is included. The text is illustrated with 110 figures and 31 tables. There are 74 references. In Soviet, 32 English, 6 German, and 2 French.

Foreword

Ch. I. Motion, Position, and Figure of the Moon (A. I. Tsvetkov)

1. Current data on the Moon, its motion and figure 7
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3. Determination of the lunar mass 10
4. Optical libration of the Moon 11
5. Determining the coordinates of lunar surface features from observation 16
6. Corrections for the relief of the Moon's libration 22
7. Physical libration of the Moon 22
8. The figure of the Moon 26
9. Determination of the albedo of lunar mountains 30
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12. Possible utilization of lunar observations for interplanetary navigation 52

Ch. II. Lunar Cartography and Selenographic Coordinates (Ch. F. Khabibulin)

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6. Maps and photographic atlases of the Moon 69
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Ch. III. Description of the Surface of the Moon (A. V. Mal'kov)

1. Introduction 77
2. Theoretical considerations 103
3. Observations of the lunar occultation of stars, as a means of detecting the atmosphere from refraction phenomena 104
4. Attempts to detect the lunar atmosphere by spectroscopic methods 109
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116

PLATE 1 MOON EXPLORATION SOV/L113

Barabekov, B.P., V.A. Bronskien, M.S. 241, 1967, B.L. Rydzanovskiy, A.V. Perlov, I.P. Stepanovich, B.V. Syrovatskiy, A.V. Khabarov, S.B. Shchegolev, V.V. Sidorov, and A.V. Iosadskiy.
Luna (The Moon) Moscow, Fizmatgiz, 1960. 364 p. 4,500 copies printed.
Ed. (title page): A.V. Perlov, Doctor of Physics and Mathematics; Ed. G.A. Maslov, Gen. Ed. B.G. Maslov.

PRENOTE: This book is intended for astronomers, astrophysicists, and other scientific and technical personnel interested in lunar research.

CONTENTS: The book, written by 11 Soviet authorities, summarizes and evaluates research done to date in astrophysics. The motion, rotation, and figure of the Moon, physical properties of the lunar surface, the question of the existence of lunar atmosphere, mapping of the Moon, radar investigations, and the effect of external cosmic forces on the Moon are discussed. An index of Russian and English astronomical terms is included. The book contains 100 illustrations, 10 tables, and 32 tables. There are 72 references. In Soviet, 12 English, 6 German, and 2 French.

The Moon SOV/L113

6. Use of radioastronomic observations to search for the lunar atmosphere Bibliography 125

Ch. I. Physical Properties of the Surface of the Moon 125
1. Albedo and the color of the Moon's surface (B.P. Barabekov) 125

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2. Polarization properties of the Moon's surface (A.V. Perlov) 136
3. The temperature of the Moon's surface (M.S. 241, 1967) 174

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Ch. II. Investigation of the Moon by Radio Methods (B.L. Rydzanovskiy) 201

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1. Radioastronomy of the Moon 202

2. Radioastronomic investigation of the Moon 219

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Ch. III. Characteristic Features of the Moon's Relief. Basic Problems of the Origin and Sequence of Development of Lunar Formations (A.V. Khabarov) 221

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2. The scale and typical forms of lunar relief 224
3. Classification and nomenclature of the typical forms of lunar relief 234
4. Criteria determining the sequence of formation of lunar relief 249

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Ch. VIII. The Role of External Cosmic Factors in the Evolution of the Moon (A.V. Stepanovich and V.A. Bronskien) 299

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2. Location of craters on the Moon's surface 304

3. Formation of seas and elafis 305

4. The theory of explosion phenomena resulting from the fall of meteorites 312

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PRASR I BOOI EEPLOITATTEN 507/013

Berezhnabov, B.P., V.A. Bronhten, N.S. Zel'tser, E.L. Keyzarskiy, A.V. Markov,
E.P. Stupnikovich, B.M. Sytnakova, A.Z. Rukhadov, Sh.M. Fakhretdinov, V.I.
Skatov, and A.L. Zakov'in.

Lena (The Nose) Moscow, Fizmatgiz, 1960. 364 p. 4,500 copies printed.

Ed. 1 (Title page): A.V. Markov, Doctor of Physics and Mathematics; Ed. 1 G.A. Maslov, Tech. Ed. 1 N.Ya. Puzanova.

PURPOSE: This book is intended for astronauts, astrophysicists, and other scientists and technical personnel interested in lunar research.

COMMENT: The book, written by 11 Soviet authorities, summarizes and evaluates research done so far in paleogeography. The motion, position, and figure of the land masses are described, the origin of the oceans is discussed, and the physical properties of the lunar surface, the question of the existence of lunar atmosphere, migration of the Moon, near investigations and the effect of external cosmic forces on the Moon are discussed. As indices of Russian and USSR scientific achievements in the field of paleogeography, there are 10 illustrations, 16 figures and 28 tables. There are 79 references.

2. Model

SCF/LJ13

4. Hypothesis as the change of color in minerals due to the effect of various "waves" of radiation

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Conclusion (A.F. Marker)

http://med1.com

AVAILABLE: Library of Congress (29 Sept. 1951)

Card 6/b

10/13/60
JAN 1961

MARKOV, A. V.

"On The Possible Structure and Nature of Formations On The Reverse Side Of The Moon."

paper presented at IAU Symposium on the Moon, Leningrad, USSR, 6-8 Dec 60.

A photometric study of negatives of the reverse side of the Moon allows for the following preliminary conclusions: (1) near full Moon the reverse side of the Moon, as also the visible, does not show any decrease in brightness towards the limb; ie., the microstructure of the surface of both sides of the Moon is the same, (2) according to estimates of brightness, on the reverse side of the Moon there are a small number of maria, a large continental area, probably covered by ring mountains, and ray systems of the Tycho-Kepler type.

MARKOV, A. V.

"The Physical Nature Of Different Zones Of The Lunar Surface."

paper presented at IAU Symposium on the Moon, Leningrad, USSR, 6-8 Dec 60.

The following conclusions on the nature of the Moon's surface can be made from an alysis of observational data obtained at different observatories.

- (1) The hypothesis on the presence of dust layers having a depth of tens of meters is undoubtedly incorrect, especially if regions of mountain ranges and plains with cracks and faults are considered.
- (2) In regions of mountain ranges, initial lunar rocks can be on the surface.
- (3) In several regions with very many large cracks, small cracks can also be present.
- (4) The other regions of the Moon are apparently covered by dry substances, composed of relatively large grains.
- (5) If the meteorite-slag hypothesis is correct, the outer layer of the lunar rocks has a harder underlying layer than it would have in the case of the powder hypothesis.

88940

3,1550 (1057,1062,1129)

S/035/61/000/001/016/019
A001/A001

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1961, No. 1, p. 62, # 1A434

AUTHORS: Markov, A.V., Chistyakov, Yu.N.

TITLE: The Temperature of Zones on the Lunar Surface at Full Moon

PERIODICAL: "Izv. Gl. astron. observ. v Pulkove", 1960, Vol. 21, No. 4, pp. 166-179 (Engl. summary)

TEXT: Thermoelectric observations were performed at Pulkovo during full moon of April 25 and September 18, 1956, and April 4, 1958, in order to compare average temperatures obtained by simultaneous determinations with a radio telescope and a radiometer for narrow zones of the lunar surface 3' wide and up to 31' long; a special radiometer was employed. The measurement data were processed using the modified formula of D.Menzel. Atmospheric absorption was calculated for the Moon's proper radiation from simultaneous determinations of water vapor quantity in the line-of-sight. The measurements showed a dependence of temperatures on the phase angle within the limits of its variation from -15 to +10°. The average temperature of the zone passing across the center of the lunar disk proved to be 358°K accord- ✓

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A001/A001

The Temperature of Zones on the Lunar Surface at Full Moon

ing to observations on April 25, 1956 (phase angle $2^{\circ}8$), which agrees with theoretical calculations. Dispersion of temperature measurements in different nights, depending on the accuracy of allowance for atmospheric absorption for the long wavelength radiation, was of the order of $\pm 18^{\circ}$, and that for the same night $\pm 4^{\circ}$. The values of infrared albedo of the Moon, average for the zones, were obtained; they were confined within the limits of 0.12 - 0.15 depending on the relative areas of seas and continents. The results obtained indicate the possibility of using observations of the type described, in combination with the data of radioastronomical measurements, for determining heat conductivity of the lunar crust. There are 8 references.

From authors' summary

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

MARKOV, A. V.

New method for increasing the precision of polarimetric measurements of features of planets. Izv.GAO 21 no.6:163-169 '60.

(MIRA 13:9)

(Planets--Observations)

MARKOV, A. V., PECHALIN, L. I. and PANCHENKOV, G. M.

"Zur Trennung der Isotope des Bors durch chemischen Austausch."

Report presented at the 2nd Conf. on Stable Isotopes.

East German Academy of Sciences, Inst. for Applied Physical Material

Leipzig, GDR 30 Oct - 4 Nov 1961

32712
S/560/61/000/009/002/009
D045/D114

3.2500 (1080)

AUTHOR: Markov, A. V.

TITLE: Determining the structure and formation of details on the Moon's far side using photographs taken at small angles of the phase

SOURCE: Akademiya nauk SSSR. Iskusstvennyye sputniki Zemli. No. 9, Moscow, 1961, 41-47

TEXT: For evaluating the accuracy of a photometrical determination of the structure and formation of details on the Moon's far side, TV images of the visible side were produced for comparison. On March 13, 1960 at Pulkovo the Moon's visible side was photographed during full phase. An AZT-7 (AZT-7) meniscus telescope, developed by D. D. Maksutov, was used. Methods and equipment employed were similar to those used on the Avtomaticheskaya bezplanetnaya stantsiya (Automatic Interplanetary Station) (AMS) for photographing the Moon's far side. The picture quality was good, particularly on large-scale photographs obtained by using an objective with a focal length of 500 mm. The images on the negatives were transmitted onto a TV screen ✓

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Determining the structure ...

and photographs of the TV images obtained. The TV apparatus was the same as that used on the AMS except that radio channels were not used. After photomeasuring the Moon's visible side by TV means, it was found that more intensive darkening appeared on the TV pictures and in some cases details could not be distinguished. Details of planets can now be photomeasured according to their images transmitted from an AMS with an accuracy of $\pm 20\%$. For evaluating the reliability of determining the structure of details of the Moon, using photographs taken at small angles of the phase, I. I. Breydo and D. Ye. Shchegolev were asked to make diagrams from TV images of details of part of the Pulkovo photograph of the Moon taken during full phase. A comparison of the original details and the diagrams drawn by the two scientists revealed the following: Breydo depicted a number of details visible on TV transmissions and described their form, without making any proposals as to their structure; Shchegolev correctly determined the structure of 20 of the 65 objects drawn by him. The TV images of photographs of the Moon and the diagrams were compared with A. V. Khabakov's (Ref. 4: Sb. "Luna". Fizmatgiz, 1960, 241) map of lunar formations and the following conclusions were drawn:

(1) TV images of photographs of the visible side, obtained by a camera with

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Determining the structure ...

a small focal length, did not reproduce any details except the mainland, seas, and large systems of bright rays on seas; (2) details on original negatives were emphasized on TV images of photographs obtained by using a large-size camera and without transmission through the air. However, dark spots in the south-western edge of the Moon, which do not actually exist, were emphasized; this could also occur in transmitting images of the Moon's far side from the AMS. The creation of unauthentic dark spots on the Moon's disk is one of the shortcomings of transmitting images by TV means. Discussing the accuracy of identifying details on the lunar relief, according to TV transmissions of pictures of the Moon's far side taken at a phase angle of $17^{\circ}5'$, the author draws the following conclusions: (1) Lunar ring formations of the first period of mountain formation are difficult to find using negatives taken during the full phase, since, under these conditions, the distribution of brightness of these rings does not depend on their morphological structure; (2) a total of 40% of the ring formations of the second period, particularly crater seas of the Plato type, etc., may be found on photographs taken with equipment similar to that installed on the AMS.

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Determining the structure ...

(3) recent ring formations. All craters of the third period were found as white spots. N. N. Bystrova is thanked for her photographs of the Moon taken at Pulkovo and Yu. P. Chistyakov for photomeasurements. N. N. Sytinskaya is also mentioned. There are 7 figures, 1 table and 4 Soviet-style references.

SUBMITTED: January 21, 1961.

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3,2500 (1080)

32713
S/560/61/000/009/003/009
D045/D114

AUTHORS: Markov, A. V., and Shchegolev, D. Ye.

TITLE: An attempt at photometrically studying the nature of details on the surface of the Moon's far side

SOURCE: Akademiya nauk SSSR. Iskusstvennyye sputniki Zemli. No. 4, Moscow, 1961, 48-51

TEXT: A photometrical study of pictures of the Moon's far side, taken from the Avtomaticheskaya mezhplanetnaya stantsiya (Automatic Interplanetary Station) (AMS), is conducted. The main task was to establish whether there is a diminution in brightness towards the edge of the photographed disk. In P. V. Makovetskiy's opinion, (Ref. 4: Astron. zh., 36, 487, 1959) the degree of brightness on the far side of the Moon should diminish towards the edges of the disk in view of reduced meteoric bombardment and less pitting on the surface. In order to verify this opinion, the authors measured a set of pictures diametrically, perpendicular to and along the "equator of intensity" and the TV scanning lines. A certain amount of darkening towards the

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An attempt at photometrically studying ...

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edge of the disk was observed only in the direction of the scanning band. This effect, apparently, was caused by the TV equipment. In other directions, no such diminution in brightness was observed. Therefore, it seems that the amount of pitting on both sides of the Moon is essentially the same. In this connection, the authors assumed that the brightness of details in the border zone observed both from the Earth and the AMS at identical phase angles, are the same, and that these details may be used as an approximate calibrating scale. The brightness and reflecting power of details on the Moon's far side and in the border zone, calculated by the authors, are given in a table. The obtained values are highly approximate in view of considerable local distortions in density and the inadequacy of the calibrating scale. Nevertheless, the following preliminary conclusions can be made on the nature of certain formations on the Moon's far side: (1) The Sea of Moscow, the Border Sea, the Mare Smythii and eastern parts of the Mare Humboldtianum and the Southern Sea are typical marine depressions; in the area of the Border Sea and the Southern Sea there are many small, circular depressions similar to submerged craters with a dark floor. The western parts of the Mare Humboldtianum and the Southern Sea are somewhat brighter. The brightness of the Sea of Dreams is still greater and is not less

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An attempt at photometrically studying ...

than that of the lunar marshes. However, there may have been an instrumental error, leading to a reduction in the brightness of the given area; (2) the floor of Tsiolkovskiy's crater is darker than the darkest craters and seas - an unusual phenomenon which requires further checking; (3) a wide area with dark-gray and light-gray parts, located between the Mare Smythii and the Sovetskiy mountain range, in reflecting power is similar to a continent of average brightness with a predominance of marshes, semi-submerged craters and craters of the Ptolemaeus and Petavius types; (4) a light area near the north pole, stretching beyond the Sea of Moscow, is similar to a light continental shield encircling the crater Tycho and covered by many ring-shaped mountains; (5) the Giordano Bruno crater and the Sovetskiy mountain range are similar in reflecting power to the ray systems of Tycho and Copernicus. Considering that light bands similar to rays are emitted from them, it can be assumed that these areas are also groups of centers of ray systems; (6) judging by the results of the photo-measurements, it can be assumed that there is no essential difference between the two sides of the Moon as regards reflectivity and pitting. N. F. Kuprevich and V. A. Fedorov are

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An attempt of photometrically studying ...

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D045/D114

mentioned. There are 1 figure, 2 tables and 7 references: 6 Soviet-bloc
and 1 non-Soviet-bloc.

SUBMITTED: February 25, 1961

Card 4/4

✓ MARKOV, A.V.

Plan for the study of planets. Vest. AN SSSR 32 no.3:94-95
Mr 1962. (MIRA 15:2)

(Planets)

L2001
S/030/62/000/008/002/005
I046/I242

AUTHOR: Markov, A.V., Doctor of Physico-Mathematical Sciences

TITLE: Investigation of the nature and structure of the lunar surface

PERIODICAL: Akademiya nauk SSSR. Vestnik, no.8, 1962, 34-38

TEXT: Photometric analysis of lunar formations on the photographs of the other side of the moon taken on October 7, 1959, by the Third Soviet Interplanetary Rocket indicates that, within the accuracy of measurements, the two sides of the moon are very similar with respect to morphology and reflectivity gradation. The surface layer of the moon is porous to a depth of about 0.4 m. The bright rays and the craters at the center of ray systems are covered with very thin dust layers of low thermal conductivity. Sites of previously strong volcanic activity on the moon are definitely characterized by ejection of gases from surface fissures. Reflection of radio and radar waves points to surface micro in-

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I046/I242

Investigation of the nature...

homogeneities of 7 to 50 cm with maximum occurrence between 20 and 50 cm. The lowest features in the macrorelief are situated 6 km below the mean horizontal; maximum elevation is attained on a plateau 3.5 km above Mare Vaporum. There are 3 figures.

MIKHAYLOV, A.A., otv. red.; DADAYEV, A.N., red.; VASIL'YEVA, L.M., red.; KAYDANOVSKIY, N.L., red.; MARKOV, A.V., red.; POTTER, Kh.I., red.; SHCHEGOLEV, D.Ye., red.; SMIRNOVA, M.Ye., red. izd-va; KONDRAT'YEVA, M.N., tekhn. red.

[New developments in lunar studies] Novos o Lune; doklady i soobshchenia na.... Moskva, Izd-vo Akad. nauk SSSR, 1963. 426 p. (MIRA 16:5)

1. Mezhdunarodnyy simpozium po issledovaniyu luny, Pulkovo, 1960. 2. Glavnaya astronomicheskaya observatoriya Akademii nauk SSSR, Pulkovo (for Mikhaylov, Kaydanovskiy, Markov, Potter, Shchegolev). 3. Chlen-korrespondent Akademii nauk SSSR (for Mikhaylov). (Moon)

VYAZANITSYN, V.P. [deceased]; GNEVYSHEV, M.N.; DOBROVOL'SKIY, O.V.;
KRAT, V.A.; MARKOV, A.V.; MOLCHANOV, A.P.; SOBOLEV, V.M.;
SHARONOV, V.V.; DEYCH, A.N., red.; MEL'NIKOV, O.A., red.;
KULIKOV, G.S., red.

[Course of astrophysics and stellar astronomy] Kurs astrofi-
ziki i zvezdnoi astronomii. Moskva, Izd-vo "Nauka." Vol.3.
1964. 375 p.
(MIRA 17:5)

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 PI-4 SSD(a)/AFWL/SSD(b)/SSD/BSA/RAEM(a)/AFETR/ESD(t) GW/WS
 ACCESSION NR AM4040598 BOOK EXPLOITATION S/

Vyazanitsyn, V. P.; Gnevyshev, M. N.; Dobrovolskiy, O. V.; Krat, V. A.; Markov, A. V.; Molchanov, A. P.; Sobolev, V. M.; Sharonov, V. V. *BT/*

A course in astrophysics and stellar astronomy. v. 3 (Kurs astrofiziki i zvezdnoy astronomii. t. 3), Moscow, Izd-vo "Nauka", 1964, 375 p. illus., biblio., indices. 2,150 copies printed.

TOPIC TAGS: astrophysics, stellar astronomy

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SUBMITTED: 18 Feb 64

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OTHER: 107

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L 47027-66 ENT(1)/FSS-2 TT/GW

ACC NR: AR6026513

SOURCE CODE: UR/0313/66/000/004/0032/0032

AUTHOR: Markov, A. V.

TITLE: Results of research on the moon and structure of upper layer of the moon's crust

SOURCE: Ref. zh. Issl kosm prostr, Abs. 4.62.237

REF SOURCE: Izv. Gl. astron. observ, v Pulkove, v. 24, no. 2, 1965, 162-167

TOPIC TAGS: moon, moon crust, mare, moon crater, radar probe, moon surface, hypsometry, hypsometric map, spaceship, photograph

ABSTRACT: The article reports basic results obtained from the study of photographs of the moon made by Luna-9 on 7 October 1959. The author evaluates the mean value of the microrelief of the moon (20—30 cm) on the basis of radar probes, and gives maximum elevations (3.5 km) and depressions (5.2--6.1 km) of the microrelief as presented by hypsometric maps. An attempt is made to generalize modern information on the composition, structure and strength of the

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ACC NR: AR6026513

surface layer of the lunar crust. It is assumed that the density of the surface layer at a depth of up to 30 cm is $0.4-0.5 \text{ g/cm}^3$, and then increases to $1.0-1.4 \text{ g/cm}^3$ at a depth of 100 m. These conclusions are based on laboratory experiments on the compaction of a layer of various powders under the action of their own weight. The article reports attempts to show the nonhomogeneity of the composition and structure of the sectors of the moon's surface belonging to its various formations. The presence of hard rock near the surface of radial craters is concluded. The maria of the eastern hemisphere are proposed as convenient sites on which to land spaceships. The bibliography has 20 titles. Ye. Straut. [Translation of abstract] [GC]

SUB CODE: 03, 17, 22, 08, 14/

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A. I. A. S. "The ...
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